No 17

No 16

An Inaugural Dissertation on CHOLERA INFANTUM.

Submitted to the Examination of the
The Revd. Frederick W. Beasley D. D. Provost
The Trustees & Medical Faculty of the
University of Pennsylvania.
For the Degree of Doctor of Medicine
On the 27th. day of October 1822.

By James M. Greene of Pennsylvania
Member of the Philad.a Medical Society.

Passed March 27th. 1823

Cholera Infantum.

Cholera Infantum is a disease that demands the serious attention of every Practitioner of Medicine in the United States, not only from its prevalence in the hot seasons, but from the mortality by which its progress may sometimes be traced.

From the cursory view which I have taken of some of the European writers who have written on the diseases of children, I have been unable to find any one that corresponds in every feature to that under consideration.

True it is that in Europe (at least the part with which I was acquainted) children are frequently distressed by bowel complaints, sometimes very tedious in their course; nay even fatal in their termination. From the circumstance that in the countries of Europe as well as here, very old matron & indeed very young one who has been

the

the mother of one or two children, thinks herself sufficiently qualified to treat those infant cases, while the Physician is never called in 'till after every old woman's cure has been tried, & every nostrum administered, without any regard to time, quantity or quality; & the case becomes almost if not entirely irremediable.

Still however there is not one of those bowel complaints similar to the disease of which we are treating; they want those distinguishing marks & peculiarities, by which Cholera Infantum is characterized.

It is indeed a difficult task in many instances, to give to diseases their true nosological titles & situations.

The only disease that I saw while in Europe, which could claim alliance in any way to Cholera Infantum

is a Diarrhœa which might be denominated bilious; from its being sometimes, tho' not invariably accompanied by a slight vomiting of bile, & the facal discharges also mixed with an unnatural quantity of the same secretion — but even these symptoms do not constitute Cholera Infantum. For, the vomiting if at all present, is neither so violent, nor of such continuance as in Cholera; besides what I have denominated the bilious Diarrhœa, may occur at any season whenever the exciting cause is applied — Whereas the Chol. Infant. appears only in the extremely hot weather between June & September. This serves as another line of distinction between these diseases

And again when we consider the numerous ways by which Diarrhœa may be caused, — As cold applied to the surface of the body, or suddenly alternating

with

with heat — Food in too great quantity, or of an improper quality — The irritation of ill digested food, or of dentition, sudden changes of aliment & hence it is that it so frequently follows weaning to these may be added Previous costiveness which sometimes goes to a considerable extent, with children & might with some propriety, be denominated Dyspepsia Infantum,

This proves a sure source of diarrhœa to infants, in a similar way as to adults — where after the dyspeptic Patient has discharged the hardened Scyballa that occupied the lower part of the intestinal ~~tube~~ canal it will be followed by a Diarrhœa which generally only continues for a few days & spontaneously ceases, leaving the Patient to return to his former costive habit.

But my opinion is that not one of the many causes of Diarrhœa which have been

men-

mentioned, & many more which might (if necessary) be adduced, ever proves the sole & only cause of Cholera Infantum, however they may tend, as they most undoubtedly do, to aggravate the disease.

But does dentition or worms which have been accused as the most prominent excitants, ever cause the disease? I would answ. not. — For, dentition as frequently happens in Winter or Spring as in Summer or Fall & Cholera Infantum does not follow at those seasons; tho' the irritation may be as great. If worms are not the cause, for none have been found in cases that have terminated fatally but other symptoms of derangement have been found in the bowels. The valvulæ conniventes have been found very prominent & Intus-susceptio, & Invagination of the intestines have been frequently discovered

It is a settled point in the medical world that cold applied to the body, will produce Catarrhs, Pneumonic complaints, Rheumatism, Diarrhea &c. &c. according as the one or the other of those parts is more susceptible or in a higher state of Predisposition

In the same manner does the excessive heat which for the most part commences suddenly in the latter part of May or beginning of June, act powerfully on the tender frames of infants; deranging not only the stomach and Bowels, but the hepatic apparatus is generally brought in to sympathize; & thus the disease of Chol. Infant. is produced.

When the warm weath. first commences, the heat is much more intolerable than it proves afterwards, when the Thermometer ranges many degs. higher; The reason is obvious — It requires

consid-

considerable time for the body, to accommodate itself to any sudden change.
If adults are thus affected by sudden transitions, how much more must Children be, whose greater excitability & tenderness of the alimentary canal are so easily aroused into action

Doctor Chapman, As well as my memory serves me, mentions it, as being a disease almost if not entirely Peculiar to the United States, the same idea I have endeavoured to support, which may be perceived in the foregoing remarks,

Indeed I think it is a distinct disease, wholly unconnected with & dissimilar to the other bowel complaints of Children observed here, or in other countries.

To the description left of it by the late Dr. Rush.* little can be added,

The

* Med. Obs. & Inq. Vol. 1st Page 155. 2nd Edit.

he commences by saying, That "It seldom makes its appearance in Philadelphia, 'till the middle of June or beginning of July, (Tho it varies in other parts of the U. S.) & continues 'till near the middle of Septem;" & its frequency & danger are always proportion, to the heat of the weather,

It affects children from the first or second week after birth, 'till they are two years old, it sometimes begins with a Diarrhoa which continues for several days without any other symptom of indisposition, but it more frequently comes on with a violent vomiting & purging & a high fever"—

Nothing can be more varied than the consistence of the discharges, from the bowels & the manner in which they are passed. In some instances they are voided without much apparent pain, but at other times

when

when the bowels are much irritated or are inflated with air, they either come in small quantities after much pain & straining, or are ejected to a considerable distance accompan.d by much noise from wind, & a fœtid smell.

The fibres of the intestines may be excited to contraction & the evacuations be very frequent, sometimes accompanied by spasms.

The exhalent vessels may be excited to an inordinate action, producing copious discharges of secretion, which may be watery, slimy or a fatty looking substance, & when from any cause, violence has been done to the Mucous Membrane of the intestines or it becomes abraded. The stools will be tinged with blood effused from some of the small vessels which are ruptured.

But the most usual appearance of the stools is green, from the admixture of bile

The manner in which such copious discharges of bile are secreted, appears to me to be as follows, The liver may be excited to inordinate secretion without any interposition of the intestines, & the bile then becomes a source of irritation to the bowels, or if the bowels be previously affected, the irritation may excite the liver to very copious secretion. — Another way by which the bile may be produced so copiously is — Vomiting. This may so far act on the Gall-bladder, as to cause it to pour its contents into the intestines & sometimes into the stomach, thro' the interposition of the Duodenum — When the irritation of the bowels is very great the matter discharged is very green, & in the highest state of excitement it will be brown. The blood effused from some of the tender vessels on the internal coats of the intestines, mixed with the bile & other secretions, easily accts for such an appearance of the evacuations.

It —

It sometimes happens in cases of this kind that portions of coagulated milk will be found floating in the discharges from the bowels, or if the child receive milk & water to quench its thirst which is always intense, The stools will be almost green, watery, & mix'd with bile, sometimes bloody and mixed with mucus, but more frequently pale & fluid of an intolerable & peculiar odour & easily penetrating the thickest folds of linen,

From the commencement the disease is attended by a high fever which tho' indistinctly mark'd is generally allowed to be of the remittent kind, The pulse is small, quick corded & very frequent, & in extreme cases the pulsations succeed each other so rapidly, as nearly to preclude the practicability of numbering them,

There is also considerable inequality of temperature, it is not unusual to find one part excessively warm, while some others & particularly the extremeties, as being farthest from

the

centre of circulation, are preternaturally cold.
Dr. Rush says, in some instances Children throw
their heads backwards & forwards & sometimes make
attempts to scratch & bite their parents, Nurses, &
even themselves

If the disease be permitted
to continue without any remedies, or if Medicine
have been applied they prove unavailing, an alar-
ming train of symptoms follow: in some cases
the mouth becomes apthous to a great extent
great emaciation takes place, the skin hangs
loose & more particularly so on the extremeties
The eyes appear dead & sunk or of a glassy
appearance, & almost if not entirely insensible
to surrounding objects. The little sufferer sleeps
the eyes half closed. in this situation it may
continue for a little, but death shortly closes
the scene. For, after the above mentioned
symptoms have been fully confirmed, I believe
there are but few cases of Recovery on record

Treat-

Treatment. Successfully to treat a disease of which the foregoing are the symptoms, a disease, which in each revolving year, so augments the bills of Mortality; must be a desideratum with every Physician possessing the Com^n Feelings of humanity, or in whose breast "the milk of human kindness has not ceased to flow"—

The first symptom of the disease according to the foregoing description which calls for relief is the excessive Vomiting.

The exhibition of an emetic to meet this indication, is thought by many (& I believe justly so) to be hazardous, particularly if the stomach be excited to convulsive & violent action. And if there be reason to suppose that the offending matter has been evacuated, or if the attack has been so sudden & violent, as to produce considerable prostration of strength, with a weak pulse & cold extremities,— The

ad-

administration of an emetic, would be unsafe & injudicious practice. Here to subdue the slight Vomiting & Nausea which remain, warm & stimulating Applications should be externally applied. The hot water bath is one of the most powerful remedies for this Symptom, especially when rendered more stimulating by the addition of Salt & Mustard or Cayenne Pepper, & after the warm bath I would order a mustard or onion Poultice to the Epigastrium, repeated every 3rd hour, till it proves successful.

Even a solution of Camphor in Spts. Turpent. or of Cantharid. mix'd with Turpent. might prove singularly successful.

At the same time I would order one or two tea spoonsful of Soda water & one drop of Laudanum; Or what would be still more efficacious, one or two tea spoonsfull of lime water in a little Mucilage of Gum-Arabic.

When the offending matter has not been completely evacuated by spontaneous vomiting, I would not hesitate to give a mild dose of Ipecacuanha under the restrictions which should be attended to in the administration of such Medicines —

Our next attention is directed to the bowels. The matter which they contain may serve as a constant source of irritation. To remove it we may employ Calomel, Castor oil or Magnesia.

In mild cases, one or two tea spoonsfull of the Oleaginous mixture given occasionally will answer, but every indication which a purgative is designed to meet, will be best fulfilled by Calomel, — Independent however of its purgative powers, it exercises a direct & powerful influence over the hepatic system. This valuable property of the Medicine should, & I believe generally does cause it to rank highest in the estimation of the best practitioners — The most eligible form of ad-

min-

administering it, is in combination with Opium & Ipecac. To a child from 6 or 8 Mo. to 1 year & half old I would give a pill composed of from 1/4 to 1/2 grain Calom. 1/4 Ipecac. & 1/16 or 1/8 Opium every two or three hours. — or the Calomel may be given in minute doses 1/8 grain rubbed up with a little sugar, is generally administered every 2 hours, 'till the stools become natural.

After we have proceeded thus far in allaying the irritability of the stomach and given one or two purges to clear the bowels, I would next try the cretaceous julep of the Dispensatories, a tea spoonful or two at a time with one or two drops of laudanum, according to the age & strength of the patient, will sometimes succeed in stopping the remaining Diarrhoea — But neither from this nor from any other medicines are we to look for universal success. — At the same time we are giving the previously mentioned Medicines, we may

give

give injections of Starch, flaxseed tea. Gum water or any other demulcent; or we may give some of the astringent injections, decoction of Galls - Oak bark &c &c — — One thing worth attending to in giving injections is - to administer them in small quantities, - they will thus have the desired effect whereas if they be given in large quantities as the generality of Nurses are in the habit of (unless previously told) they will be ejected almost as soon as given.

It is natural to suppose the little patient would require some nutriment. - For, after the disease has been of some continuance, the child will be reduced to a state of great debility, & much emaciated, before they stage or even as soon as the bowels have been evacuated & the irritability of the stomach calm'd, we should begin to give some nourishment. I do not know that any thing will ans. better than Gum - Arabic water, rendered

Pleas-

pleasant by the addition of some aromatic as a little cinnamon, cloves, or nutmeg, This preparation as far as I have seen it, has a greater effect than we could anticipate from it reasoning (a priori)

I have heard indeed that some practitioners treat the disease allopathic, by a diet of Gum-Arabic, confining the patient wholly to it, so much so, as frequently to render the discharge pure Mucilage,

If the child be not yet weaned & still able to suck, we need not be very anxious to give it much aliment, The Mother's milk is the most nutritious & at the same time the most natural support, — But in case the little patient's mouth become aphthous, the Gum Mucilage will become an article of indispensable utility, — Indeed I have seen the Gum answ^r so well that I should give it the Preference, — It generally

has-

happens in the stage of which we are treating that the extremeties are cold & the body covered with a clammy Perspiration, here the warm bath should be directed; – The Principles on which it is serviceable are so plain as not to require any Verbose explanation.

Sinapisms may also advantageously be applied to the extremeties.

This Summer (1822) I had an opportunity of testing a part of the plan of treatment which I have been endeavouring to lay down – Calling about the middle of July to see a former Acquaintance – a respectable Lady – whose Present distressd Situation, is Rendered even more Poignant by "The Remembrance of better days" And observing her youngest child about ten Months old, sick & ghastly, I enquired the cause. – From the manner in which she describd the previous state of the

little –

sufferer, I knew it was in the last stage of Cholera Infantum — No Physician being in attendance, I directed the Mother to use the Warm bath, & to give the little Patient, two or three spoonful occasionally of a mixture of hard, Water biscuit, grated down on boiled New-Milk, — She was also directed to administer a few injections of Starch — —

Having procured her some Port wine, she gave it in small quantities together with a tea-spoonful or two of the decoction of Logwood. & homely as were the remedies employ'd I had the gratification to find that in 3 days the child was convalescent.

The warm bath having equalized the temperature & the internal application together with the injection stopped the frequency of the stools which on my first seeing the child were

green

green, & watery & voided in a state of effervescence — I next ordered the cold bath & flannel roller round the child's abdom.n — & by these simple means, together with the little patient being carried out three or four times — I had the extreme pleasure of seeing it completely restored in the space of eight days from the time of my first seeing it.

I would not however attempt to say, that the plan which I pursued in this & one or two other cases would prove universally successfully, — For, as diseases are constantly varying, from change of season, peculiarity of constitution & other circumstances; the remedies applied must in like manner vary to meet the diff.t symptoms as they present themselves

If the disease be obstinate in yielding to the remedies which have been recommended, I would not abandon the

patient,

Patient as there are numerous others which may be resorted to.

We have before us the whole catalogue of Astringents in the Materia Medica both from the Mineral & Vegetable Kingdom. From the Vegetable however there are not more than three or four which I would use. viz the Gall, Logwood, Kino, & a species of the Blackberry, the latter for every laxative state of the bowels was a favourite remedy among the quacks & Nurses of my native country but was strenuously decried & opposed by the regularly bred Physicians, from the very indiscriminate manner in which it was employed.

And I am disposed to believe that astringents are too generally employed, to the exclusion of those remedies which are calculated to correct the vitiated secretions of the abdominal Viscera. — I have seen patients in the latter stage speedily recovered,

by

by the use of very small doses of Calomel alone frequently repeated, which no doubt acted as an alterative upon the hepatic & other secretions. —

About this stage the decoction of Hæmatoxylon Campeach. in a little port wine, or a little spiced Rhubarb might be advantageously given, or some weak brandy toddy sometimes proves serviceable.

As nutriment we may direct a little jelly for the little Patient, or it may have a preparation of Sago, Arrow root, or Tapioca made palatable by the addition of some spices. — The Arrow root I prefer.

What I have known to answer uncommonly well in many cases, is the liquor of Clams or Oysters, we might infer from the good effects of it in ability, that it would be serviceable here, & on trial it has been found to justify the conclusion, by imparting

tone

tone to the Stomach & bowels.

A change from the town, to the country air has been strenuously recommended by the first Practitioners.— Drs. Chapman, Rush, & Miller, speak of it in the highest terms, & from the little which I have seen of the disease, the Measure seems to be attended with the happiest effects, insomuch that a change to the country will alone sometimes effect a cure after the best directed Medical efforts have failed.—

I have now finished what I intended to say on Cholera Infantum; and in my estimation there is no disease, the succesful treatment of which is better calculated to raise the Character of the Physician, to meet the present gratitude of the Parent & the future of the child, than the disease which we have been considering, & more Particularly so, as the little

Patients

Patients are generally brought to the lowest state

The Physician perhaps in the winter of life when "his head shall be silvered o'er with age" — amidst the labours of his Profession, shall hear this pleasing salutation from his former juvenile Patient, now developed into Manhood & in the busy scenes of the world,

"This is the Doctor to whom I am particularly indebted for my life, whose assiduity & attention snatched me from a premature grave" Such an ejaculation from an individual of Merit, would more than compensate the thousand acts of Ingratitude, which Physicians are "alas!" but too liable to meet with in their progress thro' life. —

FINIS.